CLAIMS:

1. A method for producing a fluorine-containing (meth)acrylate polymer comprising:

reacting a (meth)acrylate polymer with an alcohol containing a fluorine atom represented by General Formula 1:

$R_f(CH_2)_nOH$ (1)

wherein R_f is a fluoroalkyl group or a fluoroalkyl ether group of 1 to 15 carbon atoms containing at least one or more fluorine atoms and n is an integer of 0 to 10.

2. The method for producing a fluorine-containing (meth)acrylate polymer according to Claim 1, wherein the reaction is conducted in the presence of a transesterification catalyst.

3. The method for producing a fluorine-containing (meth)acrylate polymer according to Claim 2, employing a transesterification catalyst consisting of at least one selected from alkaline metal carbonates, alkaline earth metal carbonates, alkaline metal bicarbonates and alkaline metal hydroxides as a transesterification catalyst.

4. The method for producing a fluorine-containing (meth)acrylate polymer according to Claim 2, employing a transesterification catalyst consisting of at least one selected from Lewis acids and protic acids as a transesterification catalyst.

5. The method for producing a fluorine-containing (meth)acrylate polymer according to Claim 4, employing a transesterification catalyst consisting of at least one selected from vanadium-based compounds,

titanium-based compounds, zirconium-based compounds and hafnium-based compounds as a Lewis acid.

6. The method for producing a fluorine-containing (meth)acrylate polymer according to Claim 5, employing a transesterification catalyst consisting of at least one selected from vanadium chloride-based compounds, titanium chloride-based compounds, zirconium chloride-based compounds and hafnium chloride-based compounds as a Lewis acid.

7. The method for producing a fluorine-containing (meth)acrylate polymer according to Claim 6, employing titanium tetrachloride as a Lewis acid.

8. The method for producing a fluorine-containing (meth)acrylate polymer according to Claim 5, employing a transesterification catalyst consisting of at least one selected from acetylacetonato complexes of vanadium-based compounds, titanium-based compounds, zirconium-based compounds and hafnium-based compounds as a transesterification catalyst.

9. The method for producing a fluorine-containing (meth)acrylate polymer according to Claim 5, employing a transesterification catalyst consisting of at least one selected from tetrahydroxyfuran complexes of vanadium chloride-based compounds, titanium chloride-based compounds, zirconium chloride-based compounds and hafnium chloride-based compounds as a transesterification catalyst.

10. The method for producing a fluorine-containing (meth)acrylate polymer according to Claim 5, employing a transesterification catalyst consisting of at least one selected from

alkoxides of vanadium-based compounds, titanium-based compounds, zirconium-based compounds and hafnium-based compounds as a transesterification catalyst.

11. The method for producing a fluorine-containing (meth)acrylate polymer according to Claim 5, employing a transesterification catalyst consisting of at least one selected from fluorine-containing alkoxides of vanadium-based compounds, titanium-based compounds, zirconium-based compounds and hafnium-based compounds as a transesterification catalyst.

12. The method for producing a fluorine-containing (meth)acrylate polymer according to any of Claims 1 to 11, employing an organic solvent containing a fluorine atom as a non-reactive solvent.

13. A fluorine-containing (meth)acrylate polymer obtained via a transesterification by reacting a (meth)acrylate polymer with an alcohol containing a fluorine atom represented by General Formula 1:

$R_f(CH_2)_nOH$ (1)

wherein R_f is a fluoroalkyl group or a fluoroalkyl ether group of 1 to 15 carbon atoms containing at least one or more fluorine atoms and n is an integer of 0 to 10.

14. The method for producing a fluorine-containing (meth)acrylate polymer according to Claim 13, wherein the fluorine content is 1 to 50% by weight and the glass transition temperature is 40°C to 120°C.